

REMARKS

This amendment is submitted in response to the final Office Action of 31 May 2006, in which pending claims 1-3 and 7-21 are rejected. Applicant notes that the Office Action Summary says that claims 1-3, 7-13, and 17-21 are allowed, but Applicant assumes that the Office Action Summary is erroneous.

Applicant is grateful for the Telephone Interview on 28 August 2006 between the Examiner and Applicant's attorney. This helped Applicant to better understand the Examiner's concerns.

The present independent claims are now amended without prejudice, in order to expedite allowance. The amendments introduce no new matter, and are fully supported by the application as originally filed. It is respectfully believed that these amendments will overcome the rejections, and these amendments also improve the format of the claims.

All of the independent claims are amended in a similar way to each other, and so it will now suffice to consider present claim 1.

Claim 1 Should Now Be Allowable

Compare exploded FIG. 1 of the *Rawnick Application* (US 2003/0214437), and the very similar FIG. 1 of the *Rawnick Patent* (U.S. 5,874,919) which is incorporated by reference into the *Rawnick Application*.

Claims 1, 14, 18, 19 and 20 have been amended to say that the at least one printed wiring board has "at least one radiation structure formed on said at least one first printed wiring board", and that "at least one of the at least one second printed wiring board partially overlaps at least one of said at least one radiation structure".

This amendment is in accordance with the description of the present application, which discloses to form, e.g., a first radiation structure 2-1 and a second radiation structure 2-2 on a first printed wiring board 2, as depicted in Fig. 2.

Furthermore, claims 1, 14, 17, 19 and 20 have been amended to recite "the antenna carrier is located between the at least one first printed wiring board and the at

least one second printed wiring board", and the term "and/or" has been replaced by the term "or".

Additionally, the abbreviations have been replaced in the claims, and claim 12 is amended to show that "at least one" second printed wiring board is essentially planar.

New independent claim 27 is merely a means plus function claim corresponding to claim 1.

The amendment of claims 1, 14, 18, 19 and 20 clarifies that at least one of said at least one second printed wiring board, e.g., backside flex-print 5 depicted in Fig. 2., partially overlaps at least one of said at least one radiation structure (and not the whole first printed wiring board). This is in accordance with the disclosure of Fig. 2 and page 14, lines 4-5 of the present specification, wherein the second radiation structure 2-2 of the first printed wiring board 2 is partially overlapped by said backside flex-print 5.

Thus we have addressed the concern expressed in the Office Action regarding the clarity of claim 1 as being obvious over the *Rawnick* references. *Rawnick* discloses that the parasitic element 20 completely covers every portion of antenna 10, instead of partially covering antenna 10, as can be seen from Fig. 1 of both the *Rawnick* application and patent.

Furthermore, the additional feature that "the antenna carrier is located between the at least one first printed wiring board and the at least one second printed wiring board" in the amended claims points out that according to the present invention, the antenna carrier is located between the at least one first printed wiring board and the at least one second printed wiring board.

Rawnick fails to disclose an antenna carrier located between a first PWB and a second PWB, because the elements located between first "active patch antenna element 10" and the "parasitic patch antenna element 20", i.e., "adhesive material 10", "insulating dielectric foam layer 22" and "adhesive material 31" cannot be a carrier for the "active path antenna element 10".

The Office Action's argument that *Rawnick* discloses in paragraph 1, line 5, that the radius of the parasitic antenna **20** can be smaller than the radius of antenna **10** (and thus the parasitic antenna **20** would overlap the first antenna **10** only partially) is not correct for the following additional reasons.

Rawnick discloses in paragraph [0002] a stacked patch antenna advantageously providing an active and parasitic patch antenna element having a distributed antenna resonance characteristic (paragraph 2, lines 4-7) by incorporating the disclosure of the *Rawnick* patent. The *Rawnick* patent depicts this stacked patch-configured antenna on Fig. 1 and, as can be seen thereof, this stacked patch-configured antenna is identical to the one disclosed in Fig. 1 of the *Rawnick* application. Furthermore, the *Rawnick* patent also discloses that the parasitic patch element **20** has a radius larger than that of the active patch antenna **10** (*Rawnick* patent: col. 3, lines 19-21; claim 5 and claim 15; Fig. 1) in accordance with the *Rawnick* application (paragraph [0029]; lines 7-8; Fig. 1). Thus, the wording "stacked patch antenna . . . having a distributed antenna resonance characteristic" in paragraph [0002], lines 4-7 of the *Rawnick* application is unambiguously associated with a stacked patch antenna comprising a parasitic patch element **20** having a radius larger than that of the active patch antenna **10** according to the teaching of the *Rawnick* application (and in accordance with the *Rawnick* patent). Neither the *Rawnick* application nor the *Rawnick* patent gives a hint that the parasitic patch element **20** may have a radius smaller than that of the active patch antenna **10**.

Thus, both the *Rawnick* application and the *Rawnick* patent fail to disclose that the parasitic patch antenna **20** has a radius smaller than that of the active patch antenna **10**, since both documents disclose exactly the opposite, and hence the skilled person obtains no hint from the *Rawnick* documents that the second PWB partially overlaps the first PWB according to claim 1.

Furthermore, it seems that the Office Action considers the insulating space layer **22** of the *Rawnick* application to correspond to the plane antenna carrier of claim 1, and thus the Office Action states that the active patch antenna element **10** of the *Rawnick* application is attached to a first side of the "antenna carrier" and that

parasitic patch antenna element **20** is attached to a second side of the "antenna carrier" (insulating space layer **22**).

In Applicant's view, the insulating space layer **22** of the *Rawnick* application cannot be associated with an antenna carrier according to claim 1 for the following additional reasons.

According to claim 1, the antenna carrier has to be capable of carrying the first PWB and also the second PWB. In order to fill the carrying of both PWBs, it is substantially clear for a skilled person that the antenna carrier must be suited to be fixed to another member, e.g., the housing of a mobile phone or a handheld device or any other suited. As can be seen from Figs. 1-4 of the present application, the antenna carrier **1** of the present invention fulfils this requirement.

Contrary to this, the insulating space layer **22** of the *Rawnick* application is not suited to be fixed to another member (see the *Rawnick* application; Fig. 1) which would be necessary to fulfil the requirement of a carrier for carrying both the active antenna element **10** and parasitic antenna element **20**. In point of fact, as can be seen from Fig. 1 of the *Rawnick* application, the dielectric substrate **12** acts as a carrier for the whole stacked patch antenna comprising material **13**, active path element **10**, adhesive material **33**, insulating space layer **22**, adhesive material **31** and parasitic patch antenna **20**. At the most, any of these elements of the stacked patch antenna (except for the parasitic patch antenna **20**) could be considered as a carrier element for the elements placed above this element. For example, the insulating layer **22** could be considered to represent a carrier for the parasitic patch antenna **20**, but it cannot be considered to represent a carrier for the active patch element **20**, since contrary to this active patch element **10** acts as a carrier for insulating space layer **22**.

Thus it is substantially clear for a skilled person that the insulating space layer **22** cannot be associated with the antenna carrier according to claim 1 of the present invention, since the antenna carrier of claim 1 must be suited to carry both PWBs.

Hence, only the dielectric substrate **12**, adhesive materials **16** and **18**, or the ground player of the *Rawnick* application could be considered as an antenna carrier for both the active patch antenna **10** and the parasitic patch antenna **20**, but for this case,

the *Rawnick* application fails to disclose that the parasitic patch antenna 20 is placed on the second (other) side of the antenna carrier according to claim 1.

CONCLUSION

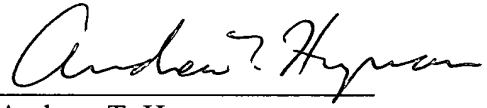
In view of the foregoing remarks and amendments, it is respectfully submitted that the present application is in condition for allowance and such action is earnestly solicited. The remarks above apply equally to independent claims 14, 17, 18, 19, 20, and 27. Therefore those claims, and the claims depending therefrom, should be allowable.

If the Examiner has any further concerns, or has suggestions as to how allowance of the present application can be facilitated or expedited, a further telephone conference with Applicant's attorney is kindly requested.

Respectfully submitted,

Dated: September 27, 2006

WARE, FRESSOLA, VAN DER
SLUYS & ADOLPHSON LLP
Building Five, Bradford Green
755 Main Street, P.O. Box 224
Monroe, CT 06468
Telephone: (203) 261-1234
Facsimile: (203) 261-5676
USPTO Customer No. 004955


Andrew T. Hyman
Attorney for Applicants
Registration No. 45,858